QUATERNARY RESEARCH

An Interdisciplinary Journal

EDITOR
Stephen C. Porter

ASSOCIATE EDITOR
Donald K. Grayson

Volume 32, 1989

ACADEMIC PRESS, INC.
San Diego New York Boston
London Sydney Tokyo Toronto

Copyright © 1989 by the University of Washington
All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1989 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0033-5894/89 $3.00

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOLUME 32

NUMBER 1, JULY 1989

MICHAEL R. WATERS. Late Quaternary Lacustrine History and Paleoclimatic Significance of Pluvial Lake Cochise, Southeastern Arizona 1

JAMES T. TELLER. Importance of the Rossendale Site in Establishing a Deglacial Chronology along the Southwestern Margin of the Laurentide Ice Sheet 12

HOWARD D. MOOERS. On the Formation of the Tunnel Valleys of the Superior Lobe, Central Minnesota 24

C. PERISSORATIS AND D. MITROPOULOS. Late Quaternary Evolution of the Northern Aegean Shelf 36

W. A. R. BRINKMANN. Comparison of Two Indicators of Climatic Change: Tree Growth and Lake Superior Water Supplies 51

CALVIN J. HEUSSER. Polar Perspective of Late-Quaternary Climates in the Southern Hemisphere 60

STEVEN RYPINS, STEVEN L. RENEAU, ROGER BYRNE, AND DAVID R. MONTGOMERY. Palynologic and Geomorphic Evidence for Environmental Change during the Pleistocene–Holocene Transition at Point Reyes Peninsula, Central Coastal California 72

RICHARD G. KLEIN AND KATHARINE SCOTT. Glacial/Interglacial Size Variation in Fossil Spotted Hyenas (*Crocuta crocuta*) from Britain 88

S. D. WEBB, G. S. MORGAN, R. C. HULBERT, JR., D. S. JONES, B. J. MACFADDEN, AND P. A. MUELLER. Geochronology of a Rich Early Pleistocene Vertebrate Fauna, Leisey Shell Pit, Tampa Bay, Florida 96

SHORT PAPERS

P. W. BIRKELAND, D. T. RODBELL, AND S. K. SHORT. Radiocarbon Dates on Deglaciation, Cordillera Central, Northern Peruvian Andes 111

SEAN J. FITZSIMONS. Reinterpretation of Pingos in Antarctica 114

DAVID W. MAY. Holocene Alluvial Fills in the South Loup Valley, Nebraska 117

LETTER TO THE EDITOR

ZHENG BENXING. Controversy Regarding the Existence of a Large Ice Sheet on the Qinghai-Xizang (Tibetan) Plateau during the Quaternary Period 121

NUMBER 2, SEPTEMBER 1989

CLAUDE HILLAIRE-MARCEL AND CHRISTIANE CAUSSE. The Late Pleistocene Laurentide Glacier: Th/U Dating of Its Major Fluctuations and $\delta^{18}O$ Range of the Ice 125

IAN A. BROOKES. Early Holocene Basinal Sediments of the Dakhleh Oasis Region, South Central Egypt 139

C. Vance Haynes, Jr. Bagnold's Barchan: A 57-Yr Record of Dune Movement in the Eastern Sahara and Implications for Dune Origin and Paleoclimate since Neolithic Times 153

Lizhong Yu and Frank Oldfield. A Multivariate Mixing Model for Identifying Sediment Source from Magnetic Measurements 168

J. R. Dodson and R. V. S. Wright. Humid to Arid to Subhumid Vegetation Shift on Pilliga Sandstone, Ulungra Springs, New South Wales 182

Peter W. Birkeland, Raymond M. Burke, and James B. Benedict. Pedogenic Gradients for Iron and Aluminum Accumulation and Phosphorus Depletion in Arctic and Alpine Soils as a Function of Time and Climate 193

Thomas A. Brown, D. Erle Nelson, Rolf W. Mathewes, John S. Vogel, and John R. Southon. Radiocarbon Dating of Pollen by Accelerator Mass Spectrometry 205

An Zhisheng and Ho Chuan Kun. New Magnetostratigraphic Dates of Lantian *Homo erectus* 213

Jinadasa Katupotha and N. P. Wijayananda. Chronology of Inland Shell Deposits on the Southern Coast of Sri Lanka 222

Françoise Gasse, Bjørg Stabell, Elizabeth Fourtanier, and Yolanda van Iperen. Freshwater Diatom Influx in Intertropical Atlantic: Relationships with Continental Records from Africa 229

Number 3, November 1989

Stephen C. Porter. Some Geological Implications of Average Quaternary Glacial Conditions 245

L. V. Benson and F. L. Paillet. The Use of Total Lake-Surface Area as an Indicator of Climatic Change: Examples from the Lahontan Basin 262

Leslie D. McFadden, John B. Ritter, and Stephen G. Wells. Use of Multiparameter Relative-Age Methods for Age Estimation and Correlation of Alluvial Fan Surfaces on a Desert Piedmont, Eastern Mojave Desert, California 276

Giles M. Marion. Correlation between Long-Term Pedogenic $CaCO_3$ Formation Rate and Modern Precipitation in Deserts of the American Southwest 291

Jingxing Lin, Shanlin Zhang, Jinbo Qiu, Biaoyun Wu, Huanzhong Huang, Huizhen Huang, Jianguo Xi, Baogen Tang, Zuren Cai, and Yubao He. Quaternary Marine Transgressions and Paleoclimate in the Yangtze River Delta Region 296

James R. Purdue. Changes during the Holocene in the Size of White-Tailed Deer (*Odocoileus virginianus*) from Central Illinois 307

Anne-Marie Lézine. Late Quaternary Vegetation and Climate of the Sahel 317

Short Paper

Kazimierz Kowalski, Wim Van Neer, Zygmunt Bocheński, Marian Młynarski, Barbara Rzebik-Kowalska, Zbigniew Szyndlar, Achilles Gautier, Romuald Schild, Angela E. Close, and Fred Wendorf. A Last Interglacial Fauna from the Eastern Sahara 335

Letter to the Editor

Stephen J. Martel, T. Mark Harrison, and Alan Gillespie. Adjustments to Calculated Quaternary Displacement Rates across the Fish Springs Fault, Owens Valley Fault Zone, California 342

Publications of Interest 344

Book Review

Richard B. Waitt. *Catastrophic Flooding*. Edited by L. Mayer and D. Nash 347

List of Critical Reviewers 349

Author Index for Volume 32 351

Cumulative Subject Index for Volumes 31 and 32 352